

AMENDMENTS TO THE CLAIMS

6. (Previously Presented) A method for locating a particular mobile station, wherein said particular mobile station is one of a plurality of mobile stations, and wireless signal measurements are capable of being obtained using wireless transmissions between each of the plurality mobile stations and a network of communication stations, each said communication station being for at least one of transmitting and receiving the wireless transmissions,
5 comprising:

first providing access to at least some of a plurality of estimators for estimating locations of said mobile stations, wherein each of said at least some estimators provide a corresponding location estimate when supplied with a corresponding portion of said wireless signal
10 measurements obtained from wireless transmissions between said mobile stations and said network of communication stations;

second providing access to a plurality of data item collections, wherein for each of a plurality of geographical locations, there is a corresponding one of said data item collections having (a1) and (a2) following:

15 (a1) a representation of the geographical location, and
(a2) data indicative of said wireless signal measurements between one of the mobile stations and the communication stations when said one mobile station is approximately at the geographical location of (a1);

for each of said at least some estimators and said data item collections, perform (b1) and
20 (b2) following:

(b1) inputting to the estimator said corresponding portion of said wireless

signal measurements obtained from each of said data of (a2) for some of
said data item collections for generating corresponding location estimates;

25 (b2) comparing, for each of at least some of said data item collections
providing input in (b1), said representation (a1) with said corresponding
location estimate for determining one or more corresponding performance
measurements of the estimator;

activating one or more of said estimators with their said corresponding portions of
wireless signal measurements obtained using wireless transmissions between the particular
30 mobile station and said network of communication stations for estimating one or more locations
of said particular mobile station;

obtaining a resulting location estimate for the particular mobile station using said one or
more locations;

wherein one of said steps of activating and obtaining is dependent upon one or more of
35 said performance measurements.

7. (Previously Presented) The method as claimed in Claim 6, wherein said plurality
of estimators includes an estimator that outputs a location for at least one of the mobile stations
that is dependent upon one of: (a) satellite signals received by said at least one mobile station, (b)
a time of arrival measurement of a signal between said at least one mobile station and the
5 network of communication stations, (c) a time difference of arrival measurement of a signal
between said at least one mobile station and the network of communication stations, (d) a
recognition of a pattern in signals communicated between said at least one mobile station and the

network of communication stations, (e) a statistical prediction technique dependent whose output location is dependent upon said plurality of data item collections, (f) an angle of arrival of signals 10 communicated between said at least one mobile station and the network of communication stations.

8. (Previously Presented) The method as claimed in Claim 6, wherein said step of activating includes determining said one or more of said estimators using at least one of said corresponding performance measurements for said one or more estimators.

9. (Previously Presented) The method as claimed in Claim 6, wherein said step of obtaining includes deriving said resulting location estimate from a first location obtained from a first of said one or more estimators, and a second estimate obtained from a second of said one or more estimators.

10. (Previously Presented) The method as claimed in Claim 9, wherein said step of deriving includes determining a most likely location for the particular mobile station using said first and second locations and at least one value obtained from said corresponding performance measurements of said first and second estimators.

11. (Previously Presented) The method as claimed in Claim 6, further including a step of responding to Internet requests with at least said resulting location estimate.

12. (Previously Presented) The method as claimed in Claim 11, wherein said resulting location estimate locates a vehicle.

13. (Previously Presented) The method as claimed in Claim 6, wherein a same communication standard or protocol is utilized for locating said particular mobile station as is used by the communication stations for providing wireless communications with the plurality of mobile stations for one or more of: voice communication and visual.

14. (Previously Presented) The method as claimed in Claim 6, wherein for one of said at least some estimators, said step of comparing includes deriving one of said corresponding performance measurements as a value indicative of a likelihood that a location estimate by said one estimator for said particular mobile station identifies one of the unknown locations.

15. (Currently Amended) The method as claimed in Claim 6, further including a step of partitioning said plurality of (a2) portions of said data item collections into a plurality of partition areas, wherein for substantially every one of said (a2) portions of said data item collections in a first of said partition areas, such said (a2) portions satisfy an associated constraint

5 for said first partition area; and

for a first of said at least some estimators, said step of (b2) of comparing includes the steps (c1) and (c2) following:

(c1) determining a first of said one or more corresponding performance measurements for said first estimator by using said corresponding location estimates from (b1)

10 wherein said some of said data item collections include those of said first partition
area; and

(c2) associating said first performance measurement with said associated constraint, so
that if said wireless signal measurements between said particular mobile station
and the communication stations satisfy said associated constraint, then said first
15 performance measurement is indicative of a likelihood that a first location
obtained from said first estimator in said step of activating identifies a location of
the particular mobile station.

16. (Previously Presented) The method of Claim 15, wherein said wireless signal
measurements between the particular mobile station and the communication stations satisfy said
associated constraint when one or more of:

5 (a) said wireless signal measurements between the particular mobile station and the
communication stations substantially identify a predetermined set of one or more communication
station identifiers that identify communication stations that detect the particular mobile station,
and

10 (b) said wireless signal measurements between the particular mobile station and the
communication stations substantially identify a predetermined set of one or more communication
station identifiers that identify communication stations that are detected by the particular mobile
station.

17. (Currently Amended) A method for determining, from a plurality of conditions, a

particular condition, wherein for substantially every one of said conditions there is [[a]] one or more corresponding sets of data for identifying the condition, comprising:

obtaining a classification scheme for partitioning said plurality of conditions into a

5 collection of classes, wherein for each said class (CLS), substantially every condition (CNDN) of said conditions CLS therein are is identifiable identified when one of their said corresponding sets of data for CNDN satisfy satisfies a class criteria for the class CLS;

first providing access to a plurality of evaluators for evaluating said conditions, when each of said evaluators is supplied with one of said corresponding sets of measurements data for said conditions, wherein at least a first of said evaluators is accessed via the Internet;

10 second providing a plurality of data item collections, wherein for each of a plurality of said conditions that are known, there is one of said data item collections having (a1) and (a2) following:

(a1) a representation of the known condition, and

15 (a2) information indicative of at least one of the corresponding data sets for identifying said known condition of (a1);

for each of at least some of said evaluators, and each class C of a plurality of said classes, perform (b1) and (b2) following:

20 (b1) inputting said information of (a2) of each of at least some of said data item collections to the evaluator for generating a corresponding condition evaluation, wherein said data of (a2) is for one of the known conditions in the class C;

(b2) comparing, for each of at least some of said data item collections, said

25 representation (a1) with said corresponding condition evaluation for
determining a corresponding performance measurement of the evaluator
for the class C;

determining at least a first of said classes for the particular condition;
activating each of one or more of said evaluators with ~~the~~ one of the one or more
corresponding sets of data for evaluating the particular condition, and thereby determining one or
30 more particular condition evaluations [[of]] for identifying said particular condition, wherein said
one or more evaluators includes said first evaluator;
obtaining a resulting evaluation for the particular condition using each of said one or
more particular condition ~~estimates~~ evaluations;
wherein at least one of said steps of activating and obtaining is dependent upon one or
35 more of said corresponding performance measurements of said first class for said one or more
activated evaluators;
transmitting said resulting evaluation on the Internet to a predetermined destination.

18. (Currently Amended) A method as claimed in Claim 17, wherein
(a) each said particular condition includes a geographical location of a mobile station;
and
(b) each said corresponding set of data for evaluating the particular condition includes
5 wireless signal measurements between the mobile station and a network of
communication stations.

19. (Previously Presented) The method as claimed in Claim 17, wherein said step of activating includes transmitting, on the Internet, a request to said first evaluator for evaluating the particular condition.

20. (Currently Amended) A method for evaluating a particular condition of a plurality of conditions, wherein for substantially every one of said conditions there is a corresponding set of data for evaluating the condition, comprising:

accessing a classifier for classifying the particular condition into one or more classes of a

5 plurality of classes for said plurality of conditions, wherein said classifier uses said corresponding set of data for the conditions for classifying the conditions;

selecting between two or more of evaluators for evaluating the particular condition, wherein communication with at least one of said two or more evaluators includes a transmission using the Internet;

10 wherein said step of selecting includes a substep of determining, for each of said evaluators, an indication as to whether information is available in said corresponding set of data for the particular condition for evaluating the particular condition by said evaluator;

activating one or more of said evaluators, selected in said selecting step, for obtaining evaluations of the particular condition, wherein a first of said one or more evaluators receives a

15 portion of said corresponding set of data for the particular condition via the Internet;

first obtaining one or more evaluator related preference data items for identifying a preferences among said evaluations, wherein said preference data items are for said one or more

classes in which the particular condition is classified;

20 second obtaining resulting evaluation information for the particular condition using at least one of said evaluations of the particular condition and at least one of said preference data items; and

transmitting said resulting evaluation information on the Internet to a predetermined destination.

21. (Currently Amended) The method of Claim 20, wherein

for each of at least some of said classes, assignment of one or more said conditions to said class is dependent upon a predetermined method of determining a similarity in said corresponding set of data for said conditions assigned to the class; and

5 wherein said step of first obtaining said one or more resulting evaluation[[s]] information includes determining a most likely evaluation using a plurality of said evaluations of the particular condition and a corresponding performance measurement for each of said plurality of evaluations.

22. (Currently Amended) The method of Claim 20, wherein said step of second

obtaining said one or more evaluator related performance measurements data items includes obtaining, for at least a first of said one or more evaluators, a corresponding one of said related performance measurements data items by comparing evaluations, obtained for said first 5 evaluator, for other of the conditions in at least one of the classes of having the particular condition with known correct evaluations of the other conditions, wherein said corresponding

one related performance ~~measurement~~ data item is indicative of a likelihood that said evaluations of the particular condition are correct evaluations.

23. (Previously Presented) The method as claimed in Claim 20, wherein said plurality of conditions is one of:

- (a) economic market related conditions, wherein said evaluators provide forecasts of future economic conditions;
- 5 (b) malfunctions in electronic systems, wherein said evaluators provide diagnoses of the malfunctions;
- (c) text in documents for scanning, wherein said evaluators provide evaluations for identifying the scanned text;
- 10 (d) vehicle malfunctions, wherein said evaluators provide diagnoses of the vehicle malfunctions;
- (e) computer malfunctions, wherein said evaluators provide diagnoses of the computer malfunctions;
- (f) communication network malfunctions, wherein said evaluators provide diagnosis of the network malfunctions;
- 15 (g) medical conditions, wherein said evaluators provide diagnoses of the medical conditions; and
- (h) weather data, wherein said evaluators provide predictions of future weather conditions.

24. (Previously Presented) The method as claimed in Claim 20, wherein said classes are hierarchically ordered.

25. (Previously Presented) The method as claimed in Claim 20, wherein said resulting evaluation information includes a diagnosis of said particular condition.

26. (Previously Presented) The method as claimed in Claim 20, wherein said resulting evaluation information and at least one said evaluations includes an estimate for said particular condition.

27. (Currently Amended) A method for determining, from a plurality of conditions, a particular condition, wherein for substantially every one of said conditions there is a corresponding set of data for identifying the condition, comprising:

determining a plurality of classes for said plurality of conditions[[]], wherein for each

5 said class (C), at least most of said conditions therein are each identified by predetermined criteria, said predetermined criteria for identifying said corresponding set of measurements data for the conditions in the class C;

determining a plurality of estimators for estimating said conditions when supplied with said corresponding set of measurements data;

10 storing a plurality of data item collections, wherein for each of said estimators and each of more than one of said conditions, there is one of said data item collections having:

(a1) a representation of the condition, and

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(a2) a representation of a data set for identifying said condition of (a1);

(a3) an estimate of said condition generated by said estimator when said representation of (a2) is input to said estimator;

activating a first of said estimators with said corresponding set of data for said particular condition for determining a first estimate of said particular condition;

20 determining a second estimate of said particular unknown condition using said representations of (a1) from said retrieved data items.

28. (Previously Presented) The method as claimed in Claim 27, wherein

(a) each said condition includes a geographical location of a wireless mobile station; and

(b) each said data set includes wireless signal measurements between the mobile station and a network of communication stations.

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29. (Previously Presented) An apparatus for locating mobile stations, wherein wireless signal measurements are capable of being obtained using wireless transmissions between each of the mobile stations and a network of communication stations, each said communication station being for at least one of transmitting and receiving the wireless

5 transmissions, comprising:

an interface for accessing a plurality of estimators for estimating locations of said mobile stations, when said estimators are supplied with a corresponding input, wherein for at least a first and a second of said estimators, their corresponding inputs includes data obtained from a different one of: (a) satellite signals received by one of the mobile stations, (b) a time difference of arrival measurement of a signal between one of the mobile stations and the network of communication stations, and (c) a multipath pattern in signals communicated between one of the mobile stations and the network of communication stations, said interface for accessing including a routing component for providing said corresponding inputs to said estimators;

10 an interface for receiving measurements of wireless signals transmitted between said mobile stations and the communication stations, said interface for receiving including a controller for requesting activation of at least one of said first and second estimators for estimating a location of one or more of the mobile stations, wherein, depending on whether said corresponding input is available for said first estimator, when said first estimator receives an activation request for locating a first of said mobile stations, a first location estimate is provided,

15 and wherein, depending on whether said corresponding input is available for said second estimator, when said second estimator receives an activation request for locating the first mobile station, a corresponding location estimate is provided;

20 an output interface for outputting, mobile station location information obtained using one or more location estimates obtained from said estimators receiving activation requests by said controller.

30. (Currently Amended) The apparatus of Claim 29, further including an archive having a plurality of data item collections, wherein for each of a plurality of geographical locations, there is a corresponding one of said data item collections having (a1) and (a2) following:

5 (a1) a representation of the geographical location, and
(a2) data indicative of said wireless signal measurements between one of the mobile stations and the communication stations when said one mobile station is approximately at the geographical location of (a1); and

further including a comparator for comparing:: for each of at least some of said 10 estimators, ~~and said data item collections, perform~~ (b1) and (b2) following:

(b1) corresponding location estimates obtained from inputting to the estimator said corresponding portion of said wireless signal measurements obtained from each of said data of (a2) for some of said data item collections ~~for generating corresponding location estimates;~~
15 (b2) ~~comparing~~ for each of at least some of said data item collections providing input for obtaining the corresponding location estimates in (b1), said representation (a1);

wherein a result from said comparator is used with said corresponding location estimate for determining one or more corresponding performance measurements of the estimator.

31. (Previously Presented) The apparatus of Claim 29, wherein said output interface

includes an access to the Internet for transmitting said location information to an Internet
5 accessible destination for which a previous request for said location information was received by
said apparatus.

32. (Previously Presented) A method for locating a particular mobile station, wherein
said particular mobile station is one of a plurality of mobile stations, and wireless signal
measurements are capable of being obtained using wireless transmissions between each of the
plurality mobile stations and a network of communication stations, each said communication
5 station being for at least one of transmitting and receiving the wireless transmissions,
comprising:

activating a first estimator from a plurality of estimators for estimating a location of the
particular mobile station, when information is available in said corresponding set of
measurements of the particular mobile station for estimating a location of the particular mobile
10 station by the first estimator;

activating a second estimator from said plurality of estimators for estimating a location of
the particular mobile station, when information is available in said corresponding set of
measurements of the particular mobile station for estimating a location of the particular mobile
station by the second estimator;

15 wherein, for providing a location estimate, each of said first and second estimators uses
data obtained from a different one of: (a) satellite signals received by the particular mobile
station, (b) a time difference of arrival measurement of a signal between the particular mobile
station and the network of communication stations, (c) a multipath pattern in signals

communicated between the particular mobile station and the network of communication stations;

20 outputting location information that provides a location of the particular mobile station,
said location information obtained using one or more location estimates provided by said at least
one of said first and second estimators.

33. (Previously Presented) A method for locating a particular mobile station, wherein
said particular mobile station is one of a plurality of mobile stations, and wireless signal
measurements are capable of being obtained using wireless transmissions between each of the
plurality mobile stations and a network of communication stations, each said communication
5 station being for at least one of transmitting and receiving the wireless transmissions,
comprising:

selecting between two or more estimators for estimating a location of the particular
mobile station, wherein each of said two or more estimators is dependent upon particular data
provided by one of: (a) satellite signals received by the particular mobile station, (b) a time
10 difference of arrival measurement of a signal between the particular mobile station and the
network of communication stations, (c) an angle of arrival measurement of a signal between the
particular mobile station and the network of communication stations, (d) a multipath pattern in
signals communicated between the particular mobile station and the network of communication
stations;

15 wherein said step of selecting includes a substep of determining, for at least one of said
estimators, an indication as to whether information is available in said corresponding set of
measurements for the particular mobile station for estimating the particular mobile station by said

estimator;

activating one or more of said estimators, selected in said selecting step, for estimating

20 one or more locations of said particular mobile station;

outputting location information that provides a location of the particular mobile station,

said location information obtained using one or more location estimates provided by said one or
more estimators activated in said step of activating.

34. (Previously Presented) A method for locating a particular mobile station, wherein

said particular mobile station is one of a plurality of mobile stations, and wireless signal

measurements are capable of being obtained using wireless transmissions between each of the
plurality mobile stations and a network of communication stations, each said communication

5 station being for at least one of transmitting and receiving the wireless transmissions,
comprising:

selecting between two or more estimators for estimating a location of the particular

mobile station, wherein each of said two or more estimators is dependent upon particular data
obtained using one of: (a) satellite signals received by the particular mobile station, (b) a time of

10 arrival measurement of a signal between the particular mobile station and the network of

communication stations, (c) a time difference of arrival measurement of a signal between the
particular mobile station and the network of communication stations, (d) an angle of arrival

measurement of a signal between the particular mobile station and the network of

communication stations, (e) a multipath pattern in signals communicated between the particular

15 mobile station and the network of communication stations;

wherein said step of selecting includes a substep of determining, for at least one of said estimators, an indication as to whether information is available in said corresponding set of measurements for the particular mobile station for estimating the particular mobile station by said estimator;

20 activating one or more of said estimators, selected in said selecting step, for estimating one or more locations of said particular mobile station;

outputting location information that provides a location of the particular mobile station, said location information obtained using one or more location estimates provided by said one or more estimators activated in said step of activating.

35. (Previously Presented) A method for locating a particular mobile station, wherein said particular mobile station is one of a plurality of mobile stations, and wireless signal measurements are capable of being obtained using wireless transmissions between each of the plurality mobile stations and a network of communication stations, each said communication

5 station being for at least one of transmitting and receiving the wireless transmissions, comprising:

selecting between two or more estimators for estimating a location of the particular mobile station, wherein each of said two or more estimators is dependent upon particular data obtained using one of: (a) satellite signals received by the particular mobile station, and (b) a

10 multipath pattern in signals communicated between the particular mobile station and the network of communication stations;

wherein said step of selecting includes a substep of determining, for each of said

estimators, an indication as to whether information is available in said corresponding set of measurements for the particular mobile station for estimating the particular mobile station by said 15 estimator;

activating one or more of said estimators, selected in said selecting step, for estimating one or more locations of said particular mobile station;

outputting location information that provides a location of the particular mobile station, said location information obtained using one or more location estimates provided by said one or 20 more estimators activated in said step of activating.

36. (Previously Presented) A method for locating a particular mobile station, wherein said particular mobile station is one of a plurality of mobile stations, and wireless signal measurements are capable of being obtained using wireless transmissions between each of the plurality mobile stations and a network of communication stations, each said communication 5 station being for at least one of transmitting and receiving the wireless transmissions, comprising:

providing access to a plurality of estimators for estimating locations of said mobile stations, wherein each of said estimators provide a corresponding location estimate when supplied with a corresponding input, wherein for at least a first and a second of said estimators, 10 their corresponding input includes data obtained from a different one of: (a) satellite signals received by the particular mobile station, (b) a time difference of arrival measurement of a signal between the particular mobile station and the network of communication stations, and (c) a multipath pattern in signals communicated between the particular mobile station and the network

of communication stations;

15 receiving at least one location estimate output by at least one of said first and second estimators depending on which of said corresponding input is available for said first and second estimators;

outputting location information that estimates a location of the particular mobile station, said location information obtained using a location estimate provided from said step of receiving.

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Please cancel Claim 37.

38. (Currently Amended) The method of Claim [[36]] 34, further including a step of repeating:

- (a) said step of activating for activating one or more of said selected estimators ~~with their corresponding portion of additional wireless signal measurements between the particular mobile station and the communication stations~~ for obtaining one or more additional location estimates of a location of said particular mobile station, and
- (b) said step of outputting for outputting for one or more additional instances of said location information;

10 wherein said step of repeating is for obtaining a more accurate location estimate of the particular mobile station.

39. (Currently Amended) The method of Claim [[36]] 38, further including a step of determining a frequency of performing said step of outputting for providing one or more additional instances of said location information to a location information receiving application.

40. (Currently Amended) The method of Claim 39, wherein said location information receiving application is for one of: an emergency response, surveillance of a person, locating a vehicle, ~~locating a first person by a predetermined second person wherein said second person is known to said first person~~, locating an animal, and informing a person of his/her location.

41. (Currently Amended) The method of Claim [[36]] 39, wherein said location information receiving application is for determining whether there is a predetermined distance between the particular mobile station and another one of the mobile stations.